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**DEPARTMENT : INFORMATION TECHNOLOGY**  
**SUBJECT : ARTIFICIAL TECHNOLOGY**

## **LAB:6**

### **TASK:1**

**BASIC TASK (Print the first 10 natural numbers using a `for` loop)**

```
for i in range(1, 11):  
    print(i)
```

## OUTPUT

```
1  
2  
3  
4  
5  
6  
7  
8  
9  
10
```

```
=== Code Execution Successful ===
```

## TASK:2

**Intermediate Task** (Print numbers from 10 down to 1 using a while loop)

```
i = 10  
while i >= 1:  
    print(i)  
    i -= 1
```

## OUTPUT

```
10
9
8
7
6
5
4
3
2
1

=== Code Execution Successful ===
```

## TASK:3

**Advanced Task (Count the number of vowels in a string using a for loop)**

```
text = input("Enter a string: ")
vowels = "aeiouAEIOU"
count = 0
for char in text:
    if char in vowels:
        count += 1

print(f"Number of vowels: {count}")
|
```

## OUTPUT

```
Enter a string: Arshia
Number of vowels: 3

=== Code Execution Successful ===
```

## TASK:4

**Challenge Task (Print the Fibonacci series up to n terms using a while loop)**

```
n = int(input("Enter the number of terms: "))
a, b = 0, 1
count = 0
while count < n:
    print(a)
    a, b = b, a + b
    count += 1
```

## output

```
Enter the number of terms: 12
0
1
1
2
3
5
8
13
21
34
55
89

=== Code Execution Successful ===
```